

# **FIRE DETECTION SYSTEM PERFORMANCE SPECIFICATION FOR DMP MODEL XR2500F**

## **1.0 GENERAL**

### **1.1 Manufacturer**

- A. The manufacturer shall have at least thirty (30) years of experience in the role of fire and security control manufacturing, and a proven track record of forward and backward compatibility for a minimum of twenty (20) years for its product's auxiliary devices, including system Remote Annunciators, annunciation devices, zone expansion modules, and addressable detection devices.
- B. The manufacturer must also manufacture receiving equipment that is compatible with standard dial-up telephone lines and network monitoring equipment that is compatible with a LAN, WAN, and the Internet. The receiving equipment shall be capable of receiving all status and alarm messages generated by the system. The receiving equipment shall be capable of updating the system date and time.
- C. Fire Alarm Control Panel (FACP) equipment manufacturer shall be:  
Digital Monitoring Products, Incorporated (DMP)  
2500 N. Partnership Boulevard  
Springfield, MO 65803  
Telephone (417) 831-9362  
Fax (417) 831-1325

### **1.2 Installer**

- A. The installing company shall show proof of having regular experience with design, installation, service, and maintenance of manufactured systems for a minimum of the last twelve (12) calendar months from the project start date. Each system installer and service person must provide manufacturer certification of technical training for installation, service, and system maintenance. Certification shall be proven with an official document issued by the manufacturer.
- B. The installing company shall provide a minimum of 8 (eight) verifiable references from its clients where the manufacturer's system has been installed within the last twelve (12) calendar months from the project start date.
- C. The installing company shall furnish and install a complete electrically supervised Fire Alarm Control Panel (FACP), as detailed in this specification. The system shall be inclusive of all necessary function, monitoring, and control capability as detailed herein and on accompanying shop drawings.
- D. The installing company shall become familiar with all details of the work, verify all dimensions in the field, and shall advise the Architect of any discrepancy before performing the work. Materials shall be installed in strict compliance with local building codes. All work shall be performed in accordance with Digital Monitoring Products, Inc. instructions. FACP and associated components must be installed and serviced by a dealer in good standing that is factory-trained by Digital Monitoring Products.

### **1.3 Central Reporting Station**

- A. The central reporting station contractor must possess an Underwriter's Laboratory (UL) listing as a "Mercantile Police Station" or "Mercantile Burglar Alarm Systems" company. A copy of the listing shall be attached as a part of this bid package.
- B. The actual alarm signal receipt and processing is a significant portion of the scope of work. Third party and/ or contract stations are permitted. UL must list the monitoring station for Protective Signaling Services or Central Reporting Station Signaling Services. A copy of the station UL listing shall be attached as part of this bid package.
- C. The monitoring station must provide reports for activity day and time, authorized individual, office name and account number and the system type being monitored. These reports are to be mailed to the user's office at the end of each month. The Office Manager or Contract Administrator may request an additional report if an incident occurs.
- D. The contractor must have a valid Alarm Operator License. A copy of this license shall be attached as part of this bid package.
- E. The contractor may be required to monitor a portion of the alarm systems by way of the end user data network.
- F. The end user shall not incur any central station setup charges by the contractor to receive alarm signals by way of the end user data network.

## 2.0 SCOPE

### 2.1 Requirements

- A. Furnish and install a complete electrically supervised Fire Alarm Control Panel (FACP) with the performance criteria detailed in this specification. The system shall be inclusive of all necessary functions, monitoring, and control capability as detailed herein and on accompanying shop drawings.
- On-site or remote video monitoring
  - Heating, air conditioning, and lighting management
  - Temperature threshold detection and monitoring
  - Humidity threshold detection and monitoring
  - Pressure threshold detection and monitoring
  - Power loss detection and monitoring, generator switching
  - Leak detection and monitoring
  - Carbon Monoxide detection and monitoring
  - Tank level threshold detection and monitoring
- B. This specification document provides the requirements for the installation, programming, and configuration of a complete Fire Alarm Control Panel (FACP). This system shall include, but not be limited to:
- Control panel
  - System cabinet
  - Power supply
  - Digital Signaling Line Circuits (SLC)
  - Notification Appliance Circuits (NAC)
  - 32-Character LCD Annunciator
  - Dual line digital communicator
  - Batteries
  - Wiring
  - Conduit
  - Associated peripheral devices
  - All initiating devices
  - Audible and visual notification appliances
  - Other relevant components and accessories required to furnish and install a complete and operational addressable reporting Life Safety System.

### 2.2 Standards

The system shall be listed as a Power Limited Device and be listed under the standards in the following table. Each system shall be supplied with complete details on all installation criteria necessary to meet all of the listings.

#### Fire Listings

- UL 864 Control Units for Fire Protective Signaling Systems
- UL 985 Household Fire Warning
- NFPA 72 National Fire Alarm Code
- NFPA 72 Household Fire Warning

#### Related Listings

- FCC part 15
- FCC part 68
- NFPA 101 Life Safety Code

### 2.3 Americans with Disabilities

All indicating and notification appliances shall comply with the Americans with Disabilities Act (ADA) requirements.

## **3.0 SUBMITTALS**

### **3.1 General Requirements**

The contractor shall submit three (3) complete sets of documentation within thirty (30) calendar days after contract award date. Indicated in the document shall be the manufacturers' names, catalog number, type, size, style, rating, and catalog data sheets for all items proposed to meet these specifications.

### **3.2 Shop Drawings**

Shop drawings shall be submitted in accordance with Section 3.0 Submittals and shall consist of a complete list of equipment and materials, including manufacturer's descriptive and technical literature, performance charts and curves, catalog cuts, and installation instructions.

### **3.3 As-Built Drawings**

The contractor shall provide a complete set of as-built drawings for the entire system upon installation completion. These drawings shall include, but not be limited to, the exact locations of all equipment, connections between all equipment, and wiring for all equipment as the system is installed.

### **3.4 Spare Parts Data**

After shop drawings are approved, and not later than thirty (30) calendar days prior to the date of beneficial occupancy, a list of spare parts data for each item of specified materials and equipment shall be submitted. The data shall include a complete list of parts and supplies with current unit prices and source of supply. Spare parts shall consist of, but not be limited to, five (5) percent of all initiating and notification appliances with a minimum of one (1) each. All spare parts shall be on site prior to commencement of acceptance testing. Depleted spare parts shall be replaced prior to beneficial occupancy.

### **3.5 Operating Documents**

The contractor shall furnish to the architect operating instructions outlining the step-by-step procedures required for system start-up, operation, and shutdown at least thirty (30) calendar days prior to acceptance test. The instructions shall include the manufacturer's name, system model number, service manual, parts list, and a description of all equipment and their basic operating features.

### **3.6 Maintenance Documents**

The contractor shall furnish maintenance instructions listing routine maintenance procedures, possible breakdowns and repairs, and troubleshooting guides at least 30 calendar days prior to acceptance test.

### **3.7 Performance Test Reports**

Upon the installed system completion and testing, test reports shall be submitted in booklet form showing all field tests performed to prove compliance with specified performance criteria.

### **3.8 Warranty**

A copy of the manufacturer's warranty for all equipment and materials shall be provided. Warranty shall be for all equipment, materials, installation, and workmanship for a minimum of three (3) years, unless otherwise specified.

## **4.0 GENERAL COMPONENT REQUIREMENTS**

### **4.1. Component Enclosure**

- A. Component enclosures refer to, but are not limited to, annunciator housings, power supply enclosures, terminal cabinets, control units, and other component housings. Enclosures shall be so formed and assembled as to be sturdy and rigid. If sheet steel is used in the fabrication of enclosures, it shall not be less than 18-gauge door and 20-gauge box frame.
- B. The FACP enclosure shall be Red and shall be designed to be surface mounted or flush mounted between sixteen-inch on-center studs. The FACP enclosure shall be fabricated of 16-gauge cold rolled steel.

### **4.2 Electronic Components**

- A. All system electronic components shall be solid-state type, mounted on printed circuit boards or electromechanical. Light duty relays and similar switching devices shall be solid-state type or electromechanical.
- B. The panel shall have an over current notification LED that lights when devices connected to the Keypad Bus and Digital SLC Loop draw more current than the panel is rated for. When the over current LED lights, the Digital SLC Loop and Keypad bus are shut down.

### **4.3 Control Unit**

- A. The Fire Alarm Control Panel (FACP) shall be the DMP XR2500F Addressable Fire Alarm Control Panel. The FACP shall be capable of operating and supervising notification appliance devices as well as addressable initiating detection devices and an integrated supervised dual line digital communicator.
- B. The control unit shall be completely programmable remotely using Remote Annunciators, and/ or using upload/ download software that communicates using SDLC 300 baud, 2400 baud, 9600 baud, or IP addressed data network. On-site programming from a personal computer shall also be permitted. Programming changes shall comply with NFPA 72 for acceptance or re-acceptance testing.
- C. A battery test shall be automatically performed to test the integrity of the standby battery. The test shall disconnect the standby battery from the charging circuit and place a load on the battery. This test shall be performed no more than every 180 seconds.
- D. The FACP shall be equipped with an anti-reversing circuit breaker to prevent damage due to accidental reversal of battery leads.
- E. The control unit shall be capable of operating and supervising notification appliance devices as well as addressable initiating detection devices and an integrated supervised dual line digital communicator.
- F. Control unit must be "Flash ROM" updatable, and program must be held in non-volatile memory. The panel shall be able to function while the update is in process.
- G. Control unit shall be capable of operating using an optional built in Encrypted Alarm Router for SCIF (Sensitive Compartmented Information Facility) applications that is certified by NIST (National Institute of Standards and Technology) for 128 Bit AES Rijndael Encryption communications.

### **4.4 User Authorization**

The system shall be capable of operation by 10,000 unique passcodes, with each passcode having one of 99 authority levels. This allows for the limitation of certain functions to authorized users. The operation of all annunciators shall be limited to authorized users by this code or by a key.

### **4.5 Annunciation Lamps/LEDs**

Visual Annunciators used on Annunciator modules and elsewhere throughout the system shall be either electric lamps or light emitting diodes (LEDs, LCDs or VFDs). Annunciators shall be so connected in the circuit that Annunciator failure, socket or protective circuitry shall not result in an improper or indeterminate signal. Lamps of varying types, voltage, and wattage shall have bases and sockets that prevent incorrect replacement.

## **4.6 On-board Annunciator**

- A. The FACP shall have an on-board annunciator to indicate fire and supervisory alarm, zone trouble, and status conditions on a 32-character LCD alphanumeric display. The annunciator shall include LEDs for AC and Battery supervision, Trouble conditions, and Alarm indication.
- B. The FACP shall be fully functional from the on-board annunciator and include buttons for Silence, Reset, System Test, and Fire Drill. Operation of the on-board annunciator shall be limited to authorized users by the use of a code or key.

## **4.7 Remote Annunciators**

- A. The system shall support a maximum of fifteen (15) supervised Remote Annunciators with the identical capabilities, functions and display layout. Operation of the Remote Annunciators shall be limited to authorized users by the use of a code or key.
- B. Communication between the FACP and all Remote Annunciators and zone expanders shall be multiplexed over a non-shielded multi-conductor cable, as recommended by the manufacturer. This cable shall also provide the power to all Remote Annunciators, zone expanders, output expanders, and other power consuming detection devices.
- C. If at any time a Remote Annunciator does not detect polling from the FACP, the Remote Annunciator shall indicate "SYSTEM TROUBLE" on its alphanumeric LCD display within 200 seconds. If at any time the Remote Annunciator detects polling, but not for its particular address, the alphanumeric display shall indicate "NON-POLLED ADDR" to signify an addressing conflict.
- D. The Remote Annunciators shall be capable of operating at a maximum wiring distance of 15,000 feet from the control unit on unshielded, non-twisted cable.
- E. The Remote Annunciator shall provide an easy-to-read English text display. The text shall match the text seen in all software reports, Remote Annunciator displays, and central station reports.
- F. The Remote Annunciator user interface shall be a simple-to-use, menu-driven help system that is completely user friendly.

## **4.8 Test Modes**

- A. Each Remote Annunciator shall include self-test diagnostics enabling the installer to test all Remote Annunciator functions: display test, key test, zone test, LED test, relay test, tone test, and address test.
- B. The system shall include a provision that permits system testing from the on-board annunciator or any Remote Annunciator. The test shall include standby battery, NAC circuit, and communication to a central station or a remote station. The system shall also include a provision for an automatic daily test of the communication link from the FACP installation site to a central station or a remote station.
- C. The system shall include a provision for displaying the condition of the internal system power and wiring. Internal monitors shall include the NAC circuits, AC power, low battery, phone line trouble 1, phone line trouble 2, transmit trouble, and network trouble.
- D. The system shall be capable of initiating a Walk Test that allows a single technician to test all connected devices. In Walk Test mode, each alarm input shall operate the associated NAC circuit for two (2) seconds. The Walk Test shall be capable of operating from the on-board annunciator or any Remote Annunciator.
- E. The system shall be capable of initiating a Fire Drill that allows manual testing of the NAC circuits. The Fire Drill shall be capable of operating from the on-board annunciator or any Remote Annunciator.

## 4.9 Communication

- A. The system shall be capable of signaling two (2) remote monitoring station receivers utilizing four (4) telephone numbers of 32 digits each using two (2) separate switched telephone network lines.
- B. Signaling to central station or remote station receivers shall occur as follows: If two (2) unsuccessful attempts are made on the first line to the first number, the system shall make two (2) attempts on the second line to the first number. If these attempts are unsuccessful, the system shall make two (2) further attempts on the first line to the second number, and then two (2) attempts on the second line to the second number. It shall then make two (2) more attempts on the first line to the first number, for a total of ten (10) attempts. After the tenth unsuccessful attempt, dialing shall stop and all alphanumeric annunciators shall display "TRANSMIT TRBL". Should another event occur that requires a report to be transmitted, the dialing process shall be repeated.
- C. The communicator shall be capable of reporting all zones of alarm, supervisory and trouble conditions, as well as system status information, with individual and distinct messages to a central station or a remote station.
- D. The system shall be capable of communicating at 300 baud using the DMP Serial 3 format.
- E. The system shall be capable of supporting Network communication with digital dialer backup, existing Ethernet data networks, satellite communication, fiber optic networks, local area networks, wide area networks, cellular communication, and retail data networks.
- F. The FACP shall be capable of TCP or UDP network communication with a retry time between three (3) and fifteen (15) seconds for a total of one (1) minute. If communication is unsuccessful the FACP shall be capable of attempting backup communication through any of the available communication methods to the same receiver or a backup receiver.
- G. Network communication between the FACP and the receiver shall be in a proprietary communication format.
- H. The FACP shall be capable of supporting Dynamic Host Communication Protocol (DHCP) Internet Protocol (IP) addressing.
- I. Underwriters Laboratories (UL) shall list network communication by the FACP for Grade AA High-Line Security and Central Station Signalling.
- J. The FACP shall be capable of two-way network communication using standard Ethernet 10BaseT in a LAN, WAN, or Internet configuration.
- K. The FACP shall be capable of communication by means of a 128 Bit AES Rijndael Encryption process certified by NIST (National Institute of Standards and Technology) to an SCS-1R receiver with a built-in Encryption Alarm Router.

## 4.10 Zone Configuration

- A. The system shall have the capacity for a maximum of fifteen (15) Remote Annunciators and a minimum of 125 four (4) zone expanders or 500 single zone expanders. It shall also have the capacity of a maximum of 125 supervised relay output expanders. All Class B zones shall be 2-wire, 18 AWG minimum, supervised by an end-of-line (EOL) device and shall be able to detect open and short conditions in excess of 500ms duration.
- B. The system shall be capable of monitoring a minimum of 562 individual initiating zones. 562 of these zones shall be capable of Class B operation.
- C. The system shall have the capacity of 100 Class B addressable reporting initiating zones on each of five (5) digital Signaling Line Circuits (SLC). All Class B zones shall be two-wire, 18 AWG minimum, supervised by an end-of-line (EOL) device and shall be able to detect open, short, and ground fault conditions in excess of 200ms duration.
- D. The system shall have a minimum of two (2) Class B initiating zones available from the FACP for support of compatible two-wire smoke detectors.
- E. A minimum of four (4) Class B addressable reporting initiating zones shall be available for each address on the digital annunciator bus.
- F. The system shall have a minimum of four (4) zones available from the FACP, which allows for the connection of Model 869 Style D Initiating Modules, providing Class A Style D four-wire initiating zones for the monitoring of waterflow devices. These zones shall be capable of monitoring for open circuits, short circuits, and ground fault conditions.
- G. The digital SLC loop and the annunciator/keypad bus shall be able to operate at a maximum wiring distance of 2500 feet from the FACP on unshielded, non-twisted cable. This distance may be extended to a total of 15,000 feet when bus repeater modules are installed.
- H. Zones on the digital SLC shall support the CleanMe™ feature in Sentrol® smoke detectors that causes the smoke detector to send a message to the FACP when detection capability has deviated from the UL sensitivity range or has failed its internal diagnostic test.
- I. Each zone shall function in any of the following configurations:
  - Night
  - Day
  - Exit
  - Fire
  - Supervisory
  - Emergency
  - Panic
  - Auxiliary 1
  - Auxiliary 2
  - Fire Verification
  - Cross-Zone
  - Priority
  - Arming

## 4.11 Output Configuration

- A. The system shall have the capacity of a maximum of 502 auxiliary relays (Form C rated for 1 Amp at 30 VDC) and up to a maximum of 574 switched ground (open collector) outputs (50mA maximum).
- B. All relay and switched ground outputs shall be capable of being independently programmed to turn on and off for selected events and at selected times.
- C. The system shall be capable of supporting 562 open collector annunciator outputs that follow that state of each zone for use with a graphic annunciator. Each annunciator output shall switch 50mA of current.

## 4.12 NAC Circuit Configuration

- A. Notification Appliance Circuit (NAC) supervision shall be provided by two (2) Class B Style W NAC outputs that monitor for short circuits, open circuits, and ground faults. The NAC circuits shall include a dry output relay for external NAC trouble conditions and a manual bell silence switch.
- B. The system shall be capable of additional Class B NAC circuits utilizing the Model 867 Notification Modules. Each module shall be controlled and supervised via the SLC loop and monitor for short circuits, open circuits, and ground faults. The NAC circuits shall include a dry output relay for external NAC trouble conditions and a manual bell silence switch.
- C. The system shall be capable of providing Class A NAC circuits utilizing the Model 865 Notification Modules. Each module shall monitor for short circuits, open circuits, and ground faults. The NAC circuits shall include a dry output relay for external NAC trouble conditions and a manual bell silence switch.

### **4.13 Power Supplies**

- A. Power supplies for the FACP shall operate from 120 VAC, supplied at the respective protected areas. Power supplies shall be all Solid State.
- B. The FACP shall have a 24 VDC 4 Amp power limited supply for Notification Appliance Circuits (NAC) with up to 6 Amps peak power available for inrush current demands.
- C. Standby batteries shall be supplied to power the system in the event of a utility power failure. Controls shall be designed to maintain full battery charge when alternating current power is available. The system shall be automatically transferred to battery power upon loss of alternating current (AC) power and return to alternating current (AC) power upon restoration. Standby batteries shall be sealed lead-acid.
- D. The system shall be capable of connecting multiple Model 504-24LX Addressable Power Boosters that are controlled and supervised by the digital SLC loop. Each Power Booster shall have a 24 VDC 4 Amp power limited supply with up to 6 Amps peak power available for inrush current demands. Each Power Booster shall also have two (2) independent Class B Style W Notification Appliance Circuits (NAC) that are controlled and supervised by the digital SLC loop.
- E. The FACP shall be capable of operating for twenty-four (24) hours on battery standby with five (5) minutes of alarm signaling at the end of this twenty-four (24) hour period (as required by NFPA 72 Central Station Signaling requirements), or sixty (60) hours on standby battery with five (5) minutes of alarm signaling at the end of this sixty (60) hour period (as required by NFPA 72 Remote Station Signaling requirements).
- F. Controls shall be designed to maintain full battery charge when alternating current is available. Batteries shall be capable of being recharged to 85% capacity within twenty-four (24) hours from battery use. A signal shall be initiated upon failure of battery or alternating current power.
- G. Approved power supplies shall meet or exceed the following power supply model specifications:
  - UL Listed DMP 505-12: 12 VDC 5 Amp with transformer and enclosure.
  - UL Listed DMP 504-24: 24 VDC 4 Amp with transformer and enclosure.

### **4.14 Transformers**

The FACP shall be provided with two transformers. One transformer shall be rated for 16 VDC and support the FACP panel. The other transformer shall be rated for 28 VDC and support the built-in 4 Amp 24 VDC power supply for the NAC circuits.

### **4.15 Serial Interface**

The FACP shall be capable of a serial interface to output information to a standard serial printer or serial interface to a communication port on a standard computer. Through FACP programming the system shall include a provision to allow the selection of which reports are to be output through programming of the FACP.

### **4.16 Control Designations**

Controls shall be provided to ensure ease of operation of all specified characteristics. Controls, switches, visual signals and indicating devices, input and output connectors, terminals and test points shall be clearly marked or labeled on the hardware to permit quick identification of intended use and location.



#### 4.17 Software

- A. The system shall interface with computer software with the capability to fully program the panel by connecting to the panel through:
  - Direct cable connection
  - Receiver phone line connection
  - Standard phone line connection
  - Ethernet network connection
  - Network connection across the Internet
- B. The system shall interface with computer software capable of monitoring and logging all events.
- C. The system shall interface with computer software capable of exporting reports in the following file formats:
  - Excel spreadsheet (\*.xls)
  - Rich Text (\*.rtf)
  - Windows Metafile (\*.wmf)
  - QuickReport (\*.grp)
  - Text (\*.txt)
  - Comma-separated (\*.csv)
  - HTML document (\*.htm)
- D. The system shall interface with computer software capable of printing custom, filtered reports including:
  - All Events
  - Zone Action
  - Arming/Disarming
  - Area Late to Close
  - User Code Changes
  - Door Access Granted
  - Door Access Denied
  - Opening/Closing Schedule Changes
  - System Monitors
  - System Events

#### 4.18 FACP Capability

The FACP shall provide:

- Expansion to a total of at least 10,000 user codes with 99 user profile definitions.
- Fifteen (15) Remote Annunciator addresses, each capable of four expansion zones.
- Twenty (20) Holiday Dates for custom holiday scheduling by area.
- Four (4) shift schedules per area.
- A total of at least 100 programmable output relay schedules.
- Thirty-two (32) individual reporting areas.
- Built-in bell and telephone line supervision.
- Built-in Encrypted Alarm Router.
- Certified operation that meets 128 Bit AES Rijndael Encryption communications.
- Certified operation that meets NIST (National Institute of Standards and Technology) standards.

## **5.0 FUNCTIONAL DESCRIPTIONS**

### **5.1 System Description**

- A. The system areas and zones shall be programmable, and the system shall store, log, display, and transmit specific custom designations for system areas, zones, and user names.
- B. To ensure continued, one-call support, the system shall be constructed of sensing components provided directly by the system manufacturer, such as power supplies, smoke and heat detectors, manual fire alarm stations, or other sensing devices that the manufacturer offers.
- C. The system controller, user interfaces, zone input devices, relay output devices, and the system signal receiving equipment shall be engineered, manufactured, assembled, and must be distributed from a location within the United States of America.
- D. The system shall support user interaction by way of a Remote Annunciator, system software, or key switch, using integrated or auxiliary devices provided by the system manufacturer.
- E. The system shall support controller zone input connections, system Remote Annunciators, and system zone expansion modules up to 562 fire input zones.
- F. The system shall be capable of offering at least five (5) zone expansion buses, each of which can support the connection of up to 15,000 feet of four-wire cable. Zone expansion and keypad data buses that exceed 2,500 feet of cable must include splitter/repeater modules to boost data voltage and maintain data integrity.
- G. The system shall provide a seamless capability to provide a minimum of 500 addressable relays, which can be located at any connection location upon a zone expansion bus.
- H. System relay outputs shall have the capability of being triggered as a result of a command from the user interface, changes in system status, changes in zone status, or by a programmable schedule.
- I. System relay output states shall be programmable for momentary, maintained, pulsed, or must follow the state of an associated system zone input.
- J. The system shall be completely programmable either locally from a Remote Annunciator or remotely through a standard dial-up, and network connections by way of a LAN, WAN, and/or by way of the Internet.
- K. The control unit shall be completely programmable remotely using Remote Annunciators, and/or using upload/download software that communicates using SDLC 300 baud, 2400 baud, or IP Addressed data network. On-site programming from a personal computer shall also be permitted.
- L. The control unit shall be equipped with an anti-reversing circuit breaker to prevent damage due to accidental reversal of battery leads.

### **5.2 Output Capacity**

- A. This system shall be capable of monitoring a maximum of 562 individual zones and controlling a maximum of 502 output relays.
- B. The FACP shall have, as an integral part of the assembly, two (2) SPDT Form C relays rated at 1 Amp at 30 VDC and four (4) open collector 12 VDC outputs rated at 50mA each. It shall also have the capacity of a maximum of 125 output expander modules with 500 switched ground, open collector outputs, 50mA maximum and 500 auxiliary relays (Form C rated at 1.0 Amp at 30 VDC).
- C. The panel shall also provide 100 programmable output schedules, and include an integral bell alarm circuit providing at least 1.5 Amps of steady, pulsed, or temporal bell output. Output type shall be programmable by zone type. Relays and voltage outputs shall be capable of being independently programmed to turn on and/or off at selected times each day.

## **6.0 COMPILED DETECTION EQUIPMENT LISTING**

### **6.1 Hard-wired**

Hard-wired detection equipment shall communicate to the system by way of the FACP loop expansion bus. The equipment shall have a three (3) year warranty as stated in the current DMP Product Catalog and meet or exceed features offered in the following products:

- Bus Splitter/Repeater Module - DMP Model 710/710F
- Zone Expansion Module - DMP Model 725
- Output Expansion Module - DMP Model 716
- Graphic Annunciator Module - DMP Model 717
- Non-addressable devices shall connect directly to zone expansion modules:
  - Manual Fire Alarms - DMP Models 850S, 850D (pull stations)
  - Heat Detectors - DMP Models 601, 602, 603, 604
  - Smoke/Smoke Heat Detectors - SLR-835B, SLR-835BH, Model 521B
- Addressable devices
  - Smoke/Smoke Heat Detectors - SLRLX and SLR-835 or SLR-835H, 521LX, 521LXT
  - Manual Fire Alarms - 850S/711, 850D/711 (pull stations)
  - Zone Expanders
    - DMP Models 711, 711E Single Zone Expander Module
    - DMP Models 714, 714-8, 714-16 (4, 8, and 16 Zone Expander Modules)
    - DMP Models 715, 715-8, 715-16 (4, 8, and 16 Zone Expander Modules powered for two wire Smoke detectors)

### **6.2 Notification Devices**

Notification equipment shall be FACP activated by way of the supervised bell output module. The equipment shall have a three (3) year warranty as stated in the current DMP Product Catalog and meet or exceed features offered in the following products:

- Bells - DMP Model 806-6, 806-10, 906-6, 906-10
- Horns - DMP Models 801, 802, 803, 901, 904, 904WP
- Strobe - DMP Models 821, 822, 921-MCW, 922-MCW,
- Horn Strobe - DMP Models 802WP-75W, 823, 923-MCW, 924-MCW, 924WP-75W
- Notification Modules - DMP Models 865, 866, 867
- Notification/Synchronization Modules - DMP Models 831, 832

### **6.3 Power Supplies and Batteries**

Power supply and battery devices shall maintain system operation. The batteries shall be checked and replaced every three to five years. The equipment shall have a three (3) year warranty as stated in the current DMP Product Catalog and meet or exceed features offered in the following products:

- Power Supply - DMP Model 504-24, 115 VAC, 24 VDC
- Power Supply - DMP Model 504-24LX, 115 VAC, 24 VDC (addressable)
- Power Supply - DMP Model 505-12, 115 VAC, 12 VDC
- Power Supply - DMP Model 505-12LX, 115 VAC, 12 VDC (addressable)
- Power Supply - DMP Model 508, 115 VAC, 12 or 24 VDC
- Battery - DMP Model 365, 12 VDC, 9.0 Ah sealed lead-acid
- Battery - DMP Model 366, 12 VDC, 18.0 Ah sealed lead-acid
- Battery - DMP Model 367, 12 VDC, 7.7 Ah sealed lead-acid
- Battery - DMP Model 369, 12 VDC, 7.0 Ah sealed lead-acid

## **7.0 INSTALLATION**

### **7.1 System Component Installation**

- A. When used in NFPA 72 compliant installations, the FACP shall be on an electrical circuit dedicated branch in accordance with the National Electrical Code (NEC) and the local authority having jurisdiction (AHJ). This circuit shall be available only to authorized personnel and shall be clearly labeled "FIRE ALARM CIRCUIT CONTROL".
- B. Materials shall be installed in strict compliance with all local, state, county, province, district, federal and other applicable building, safety, and fire standards, laws, codes, regulations, and guidelines including, but not limited to, all appendices and amendments and the requirements of the local authority having jurisdiction (AHJ).

### **7.2 Installers Responsibility**

The installer shall be responsible for coordinating the installation of all fire alarm equipment. All work shall be performed in accordance with the Digital Monitoring Products, Inc. instructions and in a manner satisfactory to the owner's representative. The installer shall be fully qualified in the installation, operation, and programming of the system.

### **7.3 Lightning Suppression**

The system shall include an optional lightning suppressor module that intercepts and directs lightning, transient, and RF interference to ground.

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